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A Virtual Failure: Evaluating the Success of Nintendo's Virtual Boy

On 15 November 1994 Nintendo unveiled its newest video game console at the annual Shoshinkai Show. The Virtual Boy sported 3-D graphics in a unique tripod-mounted unit that required gamers to immerse themselves in the dual-screen display. While Nintendo hoped that this system would be the next big thing in the gaming world, initial response was notably underwhelming, with reviewers noting a number of glaring problems inherent in the console's design (Semrad). Despite an extravagant advertising campaign and revolutionary partnership deals, the system failed to take off with the general public. Games announced for the system at the May 1996 Electronic Entertainment Expo less than a year after the console's launch were never released, with Nintendo quietly allowing the system to disappear without any formal announcement.

Historical accounts of the Virtual Boy are even shorter than Nintendo's support of the system, concisely dismissing it as a failure because of its lack of sales, which is generally attributed to problems of technical implementation and Nintendo's preoccupation with the impending Nintendo 64 system. Regardless of the reason, the consensus among critics is that the system was an undeniable failure. Nintendo chairman Howard Lincoln put it simply: "[I]t just failed" (qtd. in Sheff 450). However, the technological and ideological goals of the system, to create a new immersive gaming platform with the utopian aspirations of virtual reality, have lived on far beyond the console's mainstream presence. This attempt still resonates with diehard fans and collectors, who continue to flock to the system over a decade after its release, suggesting a cultural significance much larger than that implied by critics.

These contradictory readings of the Virtual Boy suggest that the significance of technological "failures" and, even more broadly, the definition of failure itself are characterized by a negotiable fluidity that accommodates a variety of influences. All cultural objects are necessarily overdetermined and, especially in the case of those intended for mass consumption, received by a disparate audience of individuals composed of contradictory and competing subjectivities. In the case of the Virtual Boy the disconnect between critics and niche fans brings up issues of discursive power, questioning who has the authority to make declarations of failure and the circulation to solidify these declarations in wider discourse. Furthermore, the inability of market performance to adequately explain the console's position in Nintendo's wider development and marketing strategies or its connection to media audiences' fantasies of technology underscores the necessity for a multifaceted approach to culture. Rather than signaling the endpoint for a technology, the label of "failure" indicates an opportunity to glean further insight concerning these interconnected industrial and consumer ambiguities, which, emphasized by this specific moment of conflict, provide the broader context within which the Virtual Boy exists.

As Kenneth Lipartito suggests, narratives of technological change ought not confine themselves to individual instances of change but rather take into consideration sociocultural and historical factors in order to place an instance of technological innovation into a contextual framework (76–77). Failed technologies in this view "persist well beyond their material life," as new inventions come into being as projected ideas rather than functional objects, playing a significant role in how society comprehends the "open-ended technological world" that surpasses the utilitarian evolutionary models (Lipartito 57). By viewing the Virtual Boy as part of an expansive technological narrative, the device transcends the image of the isolated miscalculation to become an intersection of societal desires, expectations, and anxieties concerning technological change that resonate far beyond any individual innovation.

These societal forces implicate both the industrial circumstances responsible for physically creating the new piece of technology as well as the cultural contribution and response to the new development. Thus, neither a top-down view determined by market response nor a solely bottom-up, socially constructed depiction of the Virtual Boy can sufficiently account for the interplay of forces involved in its development within a technological narrative. With regard to interactive media, Stephen Kline, Nick Dyer-Witheford, and Greig de Peuter's "three circuits of interactivity" model extracts technology, marketing, and culture from the more general "circuit of culture" model as the three major areas of significance for a gaming system like the Virtual Boy (50). In conceptualizing each circuit as a "dynamic process" defined by negotiations and feedback, the system as a whole works to "bind human agents and artifacts in cycles of creation, consumption, and communication," giving audiences an equal role in the meaning-making process without reducing the significance of industrial forces (Kline, Dyer-Witheford, and de Peuter 50–52). This model extends the reach of a cultural artifact beyond its period of public visibility to encompass the interaction between producers and consumers in developing a new technology, the branding and advertising campaigns that position the object in public discourse both before and after its release, and the variety of ways cultural groups receive the new technology both immediately after dissemination and well after it has faded from mainstream memory.

Using these three circuits as a starting point, I intend to reevaluate the perceived failure of the Virtual Boy by looking at how technology, marketing, and culture figure into the larger technological narrative governing the resultant interactive experience. The widely accepted labeling of the system as a failure provides an opportunity to examine this broader narrative, locating connections within wider cultural shifts involving the elusory nature of gaming audiences, industrial approaches to these audiences' technological fantasies, and the modes of interaction between media consumers and producers. When industrial forces are able to adequately respond to audience desires, the result is often envisioned as transparent success, implicitly homogenizing consumer variations and suggesting that encapsulation of these variations is not only possible but necessary for success. A failure, on the other hand, confronts the impossibility of this task, acknowledging the impreciseness of marketing's attempt to address those consumer desires that lie just out of reach. Furthermore, failure connotes a missed opportunity, providing a temporal element that shifts attention away from the object itself and onto the context influencing consumer desires at a specific moment in time. Thus, a "failure" like the Virtual Boy provides far more fertile ground for evaluating cultural shifts than a similar "successful" console, creating a site for evaluating the industrial struggle over addressing audiences at this crucial point in gaming history.

Playing with Power: Cultivating Audiences through Technology

Before Nintendo invested in the video game market, the company found its greatest successes in novelty gadgets, capitalizing on consumer desires for fun, innovative pieces of technology. In 1969 the ambitious president of the company, Hiroshi Yamauchi, established a Games Division and gave maintenance worker Gunpei Yokoi free rein to develop a product for the holiday season (Sheff 21). Yokoi ended up creating a string of profitable novelty devices, including a claw device, a "love tester," and a light-gun that led to a nationwide indoor skeet-shooting craze (Sheff 22–26). This focus on innovative novelty gadgets continued throughout Nintendo's expansion into the video game market, with every major system relying heavily on an innovative new approach to gaming, often through the use of a peripheral device.

This can be seen as the result of an industrial mode of technological development specific to Nintendo. Yamauchi created a system of individual engineering units, dubbed R&D 1, 2, and 3, with the head engineers given creative freedom. Competition and creativity were the established motivating factors for new development rather than market research or sales numbers. This encouraged radical developments, with each team trying to come up with the most innovative product possible, while allowing the engineers to experiment in multiple directions. Yokoi's R&D 1, for example, developed the portable Game & Watch and Game Boy systems along with the complex gadgetry of the Virtual Boy as well as the hit game *Metroid*, indicating that even software programming fell into the hands of these engineers (Sheff 39–41).

With this type of system in place, it is no surprise that Nintendo eventually developed a system like the Virtual Boy, which is essentially a console version of previous attempts at 3-D goggle peripherals. 3-D technology is cer-

tainly an ambitious move for any company, but Yamauchi's R&D structure encouraged developers to push the boundaries in exactly this sort of way. Nintendo's development system anticipated wild expenditures on ideas that would never come to fruition, gambling that the few ideas that did work would recoup the cost for those technologies that never made it out of R&D.

Nintendo's only potential misstep, then, could be in its decision to take the system to the public rather than abandon it in-house before sinking money into advertising and mass production. However, based on the company's history in the gaming industry, a console with this type of focus on the peripheral would have been expected to find popular appeal. While the Nintendo Entertainment System (NES) is generally considered one of the most successful gaming consoles in the medium's history, initial response to the console in the United States was tepid. In fact, it was the peripheral gadgets that proved to be the biggest selling point at early demonstrations. Yokoi adapted his earlier light-gun gadget for use with *Duck Hunt* and created the ROB, or Robotic Operating Buddy, a small robot that moved along with games like *Gyromite*. The ROB in particular, which was deemed the "#5 Smartest Moment in Gaming" by online site Gamespy ("The Little R.O.B. ot That Could"), overshadowed the system's core gaming potential at early trade shows despite being a simple novelty item with little use beyond these initial games (Sheff 160–63). So powerful was the response to these gadgets that they became the focus of the initial advertising campaign (Sheff 167), with Nintendo even hiring the company behind the success of Teddy Ruxpin to manage NES sales (Moran). Peripherals, therefore, played a major role in the console's ultimate success in the American marketplace and helped launch the company into a dominant market position, a privileged position it retained with future systems.

In Nintendo's experience these types of gadgets captured popular interest and, more importantly, consumer dollars. To this end, Nintendo has continued to stress the engaging aspect of innovative peripherals, releasing the Rumble Pak for the Nintendo 64 (N64) to bring a tactile experience to video games and, over a decade later, focusing its newest console, the Wii, entirely around the experience of a motion-sensing controller. This "Wiimote" is structured around an obsession with the peripheral, designed specifically to allow for further modification, including yet another version of the Zapper gun, a steering wheel, and insertion into the bulky *Guitar Hero* controller. This focus on the peripheral and its incorporation into Nintendo's larger marketing strategy has led the Wii to astronomical sales, outselling both competing systems, the Xbox 360 and the PlayStation 3, almost every month since its release on the worldwide market and sending the corporation's stock skyrocketing (Alpeyev).

This continuity suggests that the economic failure of the Virtual Boy did little to alter the centrality of the gadget in Nintendo's development and marketing strategies. Instead, the Virtual Boy may have actually contributed to this tradition, serving as a bold statement of Nintendo's dedication to innovative gaming concepts. In fact, Peter Main, Nintendo's then VP of marketing, saw the system as having a "focus on breakthrough technology consistent with our ongoing beliefs that you gotta do it differently, and the difference has to be a real perceived difference by the consumer" (qtd. in Sheff 449). Therefore, the console's release could more appropriately be seen as a justifiable expenditure of money, contributing to the company's brand image as technological innovators in a form of alternative marketing.

The logic of this type of radical marketing is particularly justifiable when viewed in relation to the gaming market in the mid-1990s. Nintendo had been extremely fortunate to enter the U.S. market with the NES in the period immediately following the collapse of the American home gaming market, which was due in large part to product saturation, leading to Nintendo's unrivaled dominance (Sheff 158–59). However, by the time the Super Nintendo Entertainment System (SNES) came around, competition was emerging, most notably in the Sega Genesis. Sega's *Sonic the Hedgehog* was already a smash hit by the time of the SNES launch, and Nintendo's early move into handheld gaming with the Game Boy had by now been emulated by Sega's Game Gear. While both companies were able to reach widespread commercial success, by this point Nintendo had lost its clear advantage in the American games market (Sheff 363–64).

With pressure from Genesis, Nintendo was forced to rethink corporate strategy, and an even deeper conflict loomed in the battle for the next console generation. Not only was Sega touting the Saturn as the next big system, but new competitors like Sony arrived with the impressive PlayStation. Nintendo responded to these upcoming threats by sinking money into the N64 and promoting its high-profile partnership with Silicon Graphics Inc.

(famous for Hollywood special effects) as an indicator of the revolutionary leap Nintendo claimed it was about to make. However, development issues delayed the system well beyond the release dates of its competitors' systems, with gamers adopting the PlayStation over the lackluster Saturn (Sheff 450–51).

At the same time, Nintendo was attempting to gain lost ground from Sega by redefining its brand identity. Sega had dethroned Nintendo through aggressive advertising campaigns that branded the company as hip and cool with teens. This marked a distinctive shift away from Nintendo's previous focus on children. Initial marketing for the NES involved two commercials, one targeted at children age eight to fifteen and the other at their parents, clearly situating children and young teens as the target demographic (Moran). Similarly, early campaigns for the SNES focused on young gamers, developing partnerships with Kellogg's cereal (Horton), billing games as "family" entertainment and pushing *Mario Paint* as an educational title (Fitzgerald, "Family Fun"). Nintendo even cultivated this family image through game content, famously insisting on a censored version of *Mortal Kombat* that replaced blood with "sweat."

Sega's version of *Mortal Kombat*, on the other hand, included all the blood and fatalities. Unlike Nintendo, Sega embraced a slightly older demographic and pushed its Genesis console as new and hip. Sega developed advertising campaigns "heavily targeting blood-thirsty older teens and adults," with new high-tech advancements like Sega CD and, to a lesser degree, a virtual reality peripheral playing a key role in this brand image (Fitzgerald, "Family Fun"). Early in 1994 Sega overtook Nintendo as the industry leader, cultivating this new market demographic by linking edgy advertising and high-tech products. Sega intensified this marketing trend for the release of the more technically advanced Sega Saturn in May 1995. In Europe advertisements showing the Saturn logo accompanied only by the words "Aural Sex" epitomized the company's tactic of "aiming at the 18–25 category, and . . . hoping that the 14-to-18-year-olds will aspire to understand that category" (Siler). In the United States Sega made similar attempts to cultivate this "cool" mature image in such marketing strategies as sending the Saturn along with the Lollapalooza concert tour (Fitzgerald, "Events").

Sega's success in exploiting this new market demographic sent the recently demoted Nintendo into a marketing frenzy. The company called on advertising firm Leo Burnett U.S.A. for a new brand image (Fitzgerald, "Nintendo's Task"). Burnett's answer was the "Play It Loud" campaign, a bold series of advertisements that try "to talk to that 15- or 16-year-old in a way they can totally relate to" via aggressive music, tattoos, and slang (Elliott). This emulation of Sega's marketing strategy acknowledged the significance of this older demographic in gaining industry dominance but marked a major shift in Nintendo's target audience from previous consoles. Significantly, this shift in audiences was explicitly linked to technology, with the profitable older audiences presumably interested in the more high-tech gadgets and increasing polygon counts, while the younger, less technological savvy and less profitable audience segment quickly fell out of favor.

It was during this transitional period, amid major industry and audience shifts, that development began on the Virtual Boy. In an early interview about the system Gunpei Yokoi specifically positioned the Virtual Boy as a reaction to the PlayStation and the Saturn, claiming that "many people who have seen the demonstrations of these so-called next-generation machines have already said that they just can't understand what the difference is between them and the 16bit machines" ("An Audience" 46). Though this may have been the case, Nintendo certainly didn't feel that this was necessarily a problem, as it was investing heavily in the similar N64 system.

Instead, as Yokoi also reveals in the interview, the N64 was being developed solely by R&D 3 and Silicon Graphics, leaving the two other R&D teams to find a different way to advance gaming ("An Audience" 45–46). Yokoi's team decided that the best strategy was to develop a technology that none of the other companies had and that would be incredibly difficult to copy, giving Nintendo the edge in the race for innovation. This focus on the complexities of the technology governing the Virtual Boy is emphasized throughout Nintendo's discourse on the system. Yokoi himself spent most of the *Next Generation* interview discussing the technological specificities of the system, as do most magazine articles devoted to the system. The very first article on the system in *Nintendo Power*, the internally published promotional fan magazine, looks solely at the technological aspects of the system, explaining how 3-D technology contributes to the gaming experience but with minimal discussion of what games the audience could expect ("VR 32").

Press releases concerning the system similarly focus on the technological aspects of the console, neglecting games

or their content. The first major announcement of the system's American unveiling at the 1995 Consumer Electronic Show does not mention the actual games for the console at all, only stating that developers are "working on exciting new game concepts for the Virtual Boy" ("Nintendo Introduces" 2). The entirety of this press release is devoted to touting the technical sophistication of the system while emphasizing the exclusive arrangement with Reflection Technology for its Scanned Linear Array displays. While this release certainly plays up the companies' agreement, Nintendo devoted a second entire press release to the company's investment in Reflection. This release makes Nintendo's interest in the company much more transparent, including a quote from president Yamauchi declaring that "our licensing agreement with Reflection will make Nintendo the only video game manufacturer with access to its unique technology" ("Nintendo Announces" 2). At the Electronic Entertainment Expo a few months later Nintendo released another press release furthering this focus on exclusive agreements, touting the Virtual Boy alongside the SNES games *Killer Instinct* and *Donkey Kong Country 2: Diddy's Kong Quest*, both developed by Rare to showcase the Advanced Computer Modeling technology that had made the first *Donkey Kong Country* a success ("Nintendo Unveils"). The Virtual Boy is only the most extreme example of this focus on exclusive innovative technologies, with other similar partnerships contributing to a broader corporate strategy.

Ironically, while Nintendo lost its top spot to Sega in the mid-1990s by failing to appeal to an older male teen audience and was only able to regain momentum by making edgy ads, the company's recent success with the Wii comes largely due to a reversal of this tactic. Advertising for the Wii shows young children, families, and older gamers using the system, promoting wholesome social gaming over the edgy content pioneered by Sega. Furthermore, rather than promote technological advancements through sophisticated HD graphics or powerful processors, Nintendo showcases the unique peripherals that fit neatly into Yokoi's lineage, allowing the company to keep hardware costs down while still providing new and exciting technology that conforms to this newly broadened target demographic.

The fact that both the Virtual Boy and the Wii emerge at moments of dramatic redefinitions of the gaming audience and address these audiences in very direct ways indicates the parallels between consoles. The Virtual Boy in many ways is a pure appeal to the older male teen audience that in the mid-1990s was thought to desire edgy content and boundary-pushing technology, while the Wii exists as a symbol of a new appeal to previously ignored audiences who were thought to desire a social experience, using technology that contributes to this experience without becoming intimidating. Both systems creatively adopt and adapt Nintendo's historical strategy of focusing on the peripheral, yet, despite these similarities, the Virtual Boy was abandoned shortly after release, while the Wii rocketed Nintendo far into the lead in the current console race. With all the parallels between these two consoles, clearly the supposed failure of the Virtual Boy did not prompt Nintendo to radically adjust its development strategies and actually seems more likely to have directly influenced corporate strategy, indicating the necessity to look beyond market performance in determining success.

Similarly, the other major players in the gaming world adopted strategies associated with the Virtual Boy to varying degrees and with varying levels of effectiveness. Sega, pioneers of edgy teen advertising for video games, continued using this strategy to market the Saturn throughout the Virtual Boy's appearance on the market, tying this image to the technology governing the system as well as to high-tech attachments like Internet Saturn. In this case Sega might have paid more heed to the precedent set by the Virtual Boy, as the company lost its top spot to Sony and exited the console scene shortly after. With the PlayStation, Sony resisted "hype, snazzy ads, and flowery promises" (Fitzgerald, "Marketing 100"), perhaps noting the Virtual Boy's difficulty delivering on its marketing appeals, but continued to link male teen audiences to advanced technology. Despite the stated goal of targeting even older audiences, Alvisi, Narduzzo, and Zamarian suggest that Sony's success with this expanded demographic was, among other factors, an accidental byproduct of its inability to link any proposed mascot to the console (620). Sony's intentions, however, mark a continuation of Nintendo's and Sega's focus on the established teen audience; Sony's more restrained advertising merely left room for new audiences. However, no other company has attempted such a pure peripheral based console since the Virtual Boy, with Nintendo's own Wii serving as the closest example, signaling reluctance on the part of the competitors to follow too closely in the Virtual Boy's technological footsteps, for better or worse.

By viewing the Virtual Boy as an intersection of the technological forces driving corporate history, development structure, and marketing discourse, the system is in no

way an aberration. Rather, the console exists as a predicated attempt to further Nintendo's branded image as technological innovator, compete with the technology-touting newcomer Sega, and address changes in the acknowledged gaming audience, all of which the console arguably accomplished, at least to some degree. Nintendo's redefinition of its target audience through advertisements directed at edgy older teens signals a major change in the composition of gaming audiences in the mid-1990s as well as acknowledging the perilous interactive media landscape no longer simply dominated by Sega but awaiting Sony's PlayStation. Technology underscores both of these trends, with each media corporation hoping to leverage its technological sophistication to draw in the most profitable consumers. The Virtual Boy's most significant departure, then, revolves not around the specificities of the technology but in what experience this technology produces for its audience.

A New Red World

Nintendo's attempts to appear as the gaming market's most innovative company led directly to the promotion of the Virtual Boy as a radical break from previous consoles. Advertisements for the system suggested that a whole new world awaited users, a world explicitly linked to that of more traditional virtual reality devices defined by attempts to provide an immersive experience in a "responsive virtual world" incorporating "user dynamic control of viewpoint" (Brooks 16). This association led to audience expectations about the system's game content and experience that Nintendo would have a difficult time producing.

The Virtual Boy marketing campaign was impressive. In May 1995 Nintendo claimed to have invested over $25 million in initial promotion ("Virtual Boy Launch Date" 1), including print and television advertisements. However, Nintendo had a major problem promoting the system: the games were only 3-D when viewed on the system, so images of the games were useless in print or on television. This was most notably addressed through a partnership deal with Blockbuster and television advertisements on NBC. Nintendo's promotion manager, Mark Wescott, succinctly stated: "It's a tough product to market via traditional marketing means. . . . We need to get a lot of hands-on sampling, and this promotion is a creative way to accomplish that" (qtd. in Mandese and Fitzgerald). This Blockbuster/NBC partnership concisely linked technology, marketing, and audiences, encouraging the young NBC audience that made up a good portion of Nintendo's target audience to rent the system at Blockbuster for a cheap ten-dollar investment. A coupon for this amount came with the rental to encourage those who tried out the system to take the next step and buy the system, making the endeavor low risk for gamers while physically getting the system into a large number of hands and giving consumers the unique experience, which could not be reproduced in advertisements. Nintendo declared it "the most successful partner program in the game area we've ever done," anticipating a million rentals in the first month ("Blockbuster"). Indeed, this strategy succeeded so thoroughly that Nintendo repeated the process with its next system, the N64, despite the fact that its images could be readily reproduced (Harris 47).

While these marketing strategies were successful in getting the console into curious hands, what ultimately would determine if gamers would buy the system was the experience contained in the Virtual Boy. By the mid-1990s consumers had numerous choices in game systems, meaning innovative gadgetry alone was no longer enough to convince gamers to spend a sizeable chunk of money when they already owned an SNES or Genesis and were preparing for the imminent expenditure on the next-generation consoles.

Ads for the Virtual Boy addressed this changing console landscape, acknowledging the need for more than just gimmicky 3-D graphics to sell a system and instead focusing on the revolutionary experience contained within. The primary advertising campaign promoting the system was in line with the "Play It Loud" aesthetic, depicting the current state of video gaming as prehistoric, with the Virtual Boy ushering in an entirely new way of looking at the world. This campaign, which spanned print and television, showed cavemen using the Virtual Boy, indicating that the system would provoke a radical shift in user consciousness. Statements like "Stick your head in Virtual Boy and you won't be the same when you pull it out" contribute to this idea ("A 3-D Game"), while another ad suggests that the system opens up a whole new reality, "a third dimension, a good dimension" ("Turn It On"). Other advertisements for the system replaced the caveman theme with psychedelic effects, linking the experience of using the Virtual Boy with that of a hallucination or mind-altering substance, likely an edgy drug-inspired appeal to the newly targeted older teen demographic ("Get into It").

If the advertisements for the system suggested a thoroughly different gaming experience, Nintendo's discourse

on the Virtual Boy went even further, positing the existence of an entirely new world within the console's display. Early press releases describe the system as "immersing players into their own private universe" ("Nintendo Introduces" 1), going as far as labeling it "the first three-dimensional, virtual immersion, 32-bit video game system" ("Virtual Boy Launch Date" 1). While many of these radical claims were likely an in-your-face attempt to woo older gamers, this focus on the immersive properties of the system is also part of the larger association made between the Virtual Boy and virtual reality in order to push technical prowess to mature gamers.

Virtual reality devices were a widespread fad in the late 1980s and early 1990s, populating video arcades, mall corridors, and research laboratories across the nation. What actually constitutes a virtual reality device as opposed to a gaming device was and still is blurry territory. Howard Rheingold's book on virtual reality gives a variety of examples of ways in which researchers were using the medium, suggesting that a convincing level of immersion in a virtual space and the ability to navigate this space via feedback mechanisms are two fundamental features of virtual reality (100). However, many 3-D video games played on an ordinary television screen, incorporating user feedback through a controller, also satisfy these basic conditions. Rheingold seems to be getting closer to the core of virtual reality when he discusses haptic perception, bringing a re-creation of the sense of touch into the experience (26). This suggests that the feedback in a virtual reality system must go above and beyond simple input mechanisms traditionally associated with video games, like a handheld controller, and more actively acknowledge the body of the user.

Ted Friedman's discussion of conceptions of cyberspace suggests that fantasies of the body are at the core of how society understands this term (167–71). Early attempts to transcend the body by exchanging it for the look, feel, and general experience of another body via virtual reality devices were slowly supplanted by the desire to elide the body completely through use of the Internet. However, as Friedman argues, this conception of a disembodied cyberspace dangerously represses the reality of a user's physical body as well as the physical labor required to make the entire experience possible, resulting in a resurgence of interest in technologies that incorporate the body to a larger degree.

Nintendo's own product history, when viewed from this perspective, has increasingly come to redefine the interaction between user and console through the body. Early peripherals like the Zapper gun required physical aiming of the gun, while a device like the power pad, a grid of sensors on a floor mat, incorporated the movements of the entire body for aerobic activity. The Wii, while previously described as a system revolving around the peripheral, does so by redefining the interaction between the peripheral and the body. The Wiimote allows the system to replicate the motions of the user's off-screen body on-screen, while a newer peripheral like the Wii Balance Board works like an advanced power pad, registering full body motion.

The Virtual Boy arrived at a critical moment in the evolution of the relationship between the body and electronic technology, with virtual reality still on the public's mind and when the promise of a disembodied Internet had not yet taken hold. Thus, Nintendo decided to market the Virtual Boy not merely as a 3-D iteration of the old consoles but as a virtual reality device capable of transporting users to an entirely new world. This strategy is most apparent in the naming of the system, which, along with the physical design of the console, which emulates the head-mounted goggles associated with virtual reality, directly ties the device to virtual reality systems. On the surface, then, the Virtual Boy appeared to be a virtual reality device designed for consumers, providing an experience different from traditional video games. As president Yamauchi claimed, the system "will transport game players to a 'virtual utopia' with sights and sounds unlike anything they've ever experienced" ("Nintendo Introduces" 2), structuring consumer expectations through the framework of virtual reality.

These expectations, however, turned out to be much more difficult to deliver than Nintendo may have initially thought. Yamauchi's statement about the system's utopian possibilities is qualified by a second clause, stating that it would be delivered "all at the price of a current home video game system" ("Nintendo Introduces" 2). Nintendo was well aware of the need to keep costs low, as the company typically followed the "razor marketing" approach of pricing hardware affordably in order to make a profit off the company's carefully controlled software (Kinder 91–92). In the past Nintendo had insisted on affordability alongside innovation, two concepts that do not always easily coincide. Nintendo's first major success in the home video game market, the Famicom (the NES outside Japan), undercut the competition, selling for less than half the price of competitors' devices while offering even better technology (Sheff 29). In this case Nintendo was able to

convince manufacturers to provide units at low cost due to the high sales volume guaranteed by Yamauchi (Sheff 31–32).

With the Virtual Boy, however, economic limitations severely impacted available technology, in turn affecting the utopian experience Yamauchi boasted of delivering. The system ended up costing $180 at launch, which was $20 less than the launch prices of either the Sega Genesis or Nintendo's own SNES and significantly lower than the prices of the next-generation consoles, but far more expensive than the $100 Game Boy. At a time when consumers were still getting used to spending $100 plus the price of games and accessories on what was considered a child's toy, the prospect of paying $180 on a system that was not completely portable or as fully featured as the next-generation systems did not seem logical to many consumers.

Therefore, the system needed to deliver a fantastic experience to compete with other consoles, which was tough to produce on a limited budget. Despite a *Nintendo Power* article contending that "the red and black images give the virtual world even more of a sci-fi look" ("VR 32" 84), this stylistic choice was actually economically dictated. Multicolor LEDs were extremely expensive at the time, forcing Yokoi to work entirely with the cheapest LEDs available, which happened to be red (Kolan, "Virtual Boy Revisited"). While a monochromatic display may have worked fine for the Game Boy, the red world of the Virtual Boy was cited as a cause for concern in most articles written about the system, with some journalists claiming the effect gave gamers headaches and other uncomfortable side effects (Kent). Even more significantly, this effect eliminated any possibility of the virtual world passing as a new form of reality, except as one that was generally unpleasant. The manual for the system is punctuated by frequent "Caution" sections warning users about possible head/neck/eye strain, headaches, and dizziness (see pages 13, 15, 16, 23). This also impacted game design, as *Virtual Boy Wario Land*, for example, enforces a twenty-minute time limit on each stage to encourage users to take the periodic breaks suggested in the instruction manual (Kolan, "Virtual Boy's Best Games"). These frequent pauses took players out of the supposedly immersive experience, forcing them to return to reality all too often.

Furthermore, the games that were ultimately released for the system did little to produce a new world: most were just 2-D games with 3-D effects. One reviewer bluntly states: "Each of the first five titles being released by Nintendo for the Virtual Boy is an attempt to fire new life into an old 8-bit title by adding a few three-dimensional effects" ("Rating Virtual Boy"). Nintendo's designers had no illusions about what type of experience they were creating, with Yokoi stating that the system was "most suited to action and puzzle games," genres that are not particularly compatible with the virtual reality experience since they rarely take advantage of first-person perspective ("An Audience" 46). While he does mention "shoot-em-ups" and role-playing games as a future possibility, none of these games were ever released and were certainly not the focus of Nintendo's development strategy.

Finally, the Virtual Boy completely neglects virtual reality devices' radical incorporation of the user's body into the feedback system. Rather than install expensive motion sensors into the headset to register head movement, the Virtual Boy reverted back to the traditional console mode of interactivity: the handheld controller. The designers did add more buttons to allow for movement in three-dimensional space, but the conception of the way the body interacted with the on-screen images was no different from any previous console. Even more distressing, the delicate nature of the device required the user's head to be completely still, eliminating those expected body movements facilitated by television-based and handheld systems when the user becomes engrossed in the experience, such as leaning into curves during a racing game or leaning forward during an especially intense action sequence. Playing the Virtual Boy, therefore, feels much more like peering into an alien world from a distance rather than actually inhabiting any believable tactile space.

In regard to both technology and game content, the Virtual Boy counteracted the immersive experience that made up the core of Nintendo's marketing strategy. The fact that partnership deals successfully installed the system into a large number of hands for trial periods actually worked against Nintendo, as it allowed users to see firsthand that a world similar to that of virtual reality devices did not exist within the Virtual Boy. However, while there were few long-term adopters, these trial runs did expose a huge number of people to Nintendo's continuing attempts to break the mold with novel technology, furthering its more general goal of brand promotion to fend off the advances of Sega and Sony.

Thus, despite successfully appealing to a new demographic and recognizing the changing face of game play-

ers, the experience provided by the system ignored the technological desires held by this audience. Inconsistency between marketing and technological development within Nintendo ultimately meant that consumers did not receive the expected experience, which may point to faults in the company's internal structure but which perhaps suggests the general difficulties in addressing audiences during a period of radical change.

Conclusion: Pure Mediation

Although long maligned, Nintendo's Virtual Boy indicates that video games and their associated technology play a significant cultural role for more than just those who consider themselves gamers. New technologies emerge out of general societal desires when producers attempt to project these widespread hopes onto material goods as a means to both make a profit and stimulate cultural progression. Interactive technology suggests a new method of coexisting with media that have spawned out of an overly saturated environment, providing a means to control surrounding images rather than blindly accept them.

In many ways television studies grappled with similar issues, attempting to elevate what is perceived as a "low" cultural form into a complex entity that altered the manner in which the general population experienced the world through visual media. Video games transformed the domestic sphere even further, hijacking the television screen and giving control to those in the living room rather than in the distant television station. This reevaluation of media technology forms a primary strain of the Virtual Boy's struggle to advance the video game medium by incorporating virtual reality, marking a further shift in interactive technology but bringing with it the conflicting specificities of each medium and its audience's associated fantasies.

It is this struggle over mediated fantasies that made the Virtual Boy exciting to a select portion of gamers on initial release as well as to collectors today. Between exchanging information about their game collections, the members of the "Planet Virtual Boy" forums, still active over a decade after launch, hint at the reasons behind their love of the console. Aside from a more general nostalgia, the major motivation given is that to which Nintendo aspired: it provides an immersive experience far beyond other consoles. I have suggested that Nintendo's branding of the system as having accomplished this task may have contributed to consumer disillusionment following trials. Users on "Planet Virtual Boy" seem able to appreciate the attempt despite technical shortcomings. In fact, admiration for the console's "Icarus" status suggests that these gamers still desire that new virtual world Nintendo couldn't quite create. One poster to this end feels that "[g]raphics on consoles can only improve to a certain point. Immersiveness [*sic*] is the next step. The next step in video games is true 3d, until then the only technology that comes close is the VB," suggesting that even in the time since the Virtual Boy consoles have not been able to make that decisive break that will truly reimagine gaming (Raverrevolution).

Statements like this indicate a wider shift in the way society conceptualizes and interacts with media. Bolter and Grusin offer the concept of "remediation," a paradoxical proliferation of media that simultaneously encourages the disavowal of the occurrence of mediation as a way of looking at advances in media technology (5). The authors position virtual reality as a "cultural metaphor for the ideal of perfect mediation" in that it appropriates all previous media forms into a transparent experience (Bolter and Grusin 161–62). For users, this experience is an "exercise in occupying a visual point of view," encouraging an examination of the relationship between the body and the world through a virtual self (Bolter and Grusin 165–66). Hence, virtual reality technology's effectiveness is predicated on the first-person perspective to generate this new idea of the self along with an emphasis on the use of the body, either through tactile sensations or motion sensing technology, to navigate this virtual world. All of this technology builds an experience in which the user feels a transcendence of the body and the inhabitation of a new one, coming to comprehend the virtual world from a completely separate point of view.

The Virtual Boy aspires to this revelatory experience but ultimately struggles to merge the two distinct media forms of home consoles and virtual reality devices. The final design appeals to the experience of the latter but was couched in the former's traditions. Gamers looking solely at the available content were not duped by Nintendo's marketing bravado, instead identifying the system as reproducing 2-D games with 3-D effects while ignoring virtual reality's conception of the body. Those interested in the console's unique experience, however, were able to see the attempt to advance the medium by moving toward the ideal transparency and bodily exchange sought by virtual reality devices. For these gamers, Nintendo's aspirations to a utopian mediated experience corresponded to their

own desires to understand their experience in a media-saturated society and the role of the body in this world. The technical failures of the system only reaffirmed the societal realization that modern life is necessarily mediated through available technology, creating an experience of the real as reliant on economics as perception.

The Virtual Boy, then, serves as an extreme example of a much larger interrogation of technology's role in conceptualizing the social experience of reality. Due to its status as a failure, accounts of the system's history draw attention to larger narratives of technological advancement and reconfiguration, emphasizing the continuous renegotiations at work in all media forms while drawing attention to the changing relationship between audiences and industry. As part of this larger cultural shift, the failure of the Virtual Boy serves as a potent indication of how cultural desires, technological limitations, and marketing imperatives collide to create a unique societal expression of both past experiences and projected notions of the future. Rather than merely serving as a footnote in the history of gaming, the failure of the Virtual Boy provides a snapshot of the industrial difficulties encountered in addressing these vast consumer changes and, more significantly, serves as an optimal representation of the conflicts implicit in the larger cultural experience of technology.

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